

Remarks

Claims 8 - 17 are pending. Favorable reconsideration is respectfully requested.

Claims 8 - 16 have been provisionally rejected for obviousness-type double patenting over commonly assigned and copending U.S. Application Serial No. 10/557,751.

Applicants do not agree that there is an issue of obviousness-type double patenting here since the claims are distinct. The 10/557,771 application requires the primer composition to also contain an H-siloxane, which the present claims do not. However, to expedite prosecution, submitted herewith is a Terminal Disclaimer disclaiming the term of any patent issuing from the 10/557,751 application which might extend beyond the term of any patent issuing from the present application. Withdrawal of the obviousness-type double patenting rejection is therefore respectfully solicited.

Claims 8 - 16 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Uwe et al. DE 3,727,078 ("Uwe") in view of Maruyama et al. 4,708,947 ("Maruyama '947") further in view of Maruyama et al. U.S. 4,617,239 ("Maruyama '239"). Applicants respectfully traverse this rejection.

The present invention is directed to an improvement in preparing silicone release substrates where a primer is employed between the silicone release coating and the substrate. Substrates are generally of paper, but other substrates such as polymer sheets and films are also useful. One primer which has been used in the past is polyvinyl alcohol. However, such coatings are known to be deficient in a number of properties. Silane-modified polyvinyl alcohol polymers have also been used, as disclosed in *Maruyama '239*. However, while an improvement over conventional polyvinyl alcohols, these silane-modified polyvinyl alcohols also have numerous disadvantages, as discussed in the present specification. These include, in particular, low adhesion to the silicone release coating when applied after even modest storage, as shown in the table on page 10 of the application. The performance of the silane-modified polyvinyl alcohol

was virtually identical to that of unmodified polyvinyl alcohol (both poor performance) after only 7 days storage.

Applicants have surprisingly discovered that if a 1-alkylvinyl ester monomer is copolymerized with vinyl acetate and an unsaturated silane, the 1-alkylvinyl ester being present at 1 to 30 weight percent, the silane-modified polyvinyl alcohol obtained upon hydrolysis not only provides the same high performance as freshly prepared silane-modified polyvinyl alcohol, but retains this high performance after storage, while the silane-modified polyvinyl alcohol loses its performance rapidly. The subject invention 1-alkylvinyl-silane-modified polyvinyl alcohols also are viscosity stable upon storage, whereas the conventional polyvinylalcohols are not. As shown in the Table on page 11, the viscosity of the subject invention polyvinylalcohols remained substantially constant over two weeks, while that of a silane-modified polyvinyl alcohol of *Maruyama* increased more than 300%!

DE 3727078 teaches silicone release papers where the silicone coating may be applied over a base coat, which may be a chrome stearate complex of a polyvinyl alcohol. DE 3727078 does not appear to disclose a binder of polyvinyl alcohol itself. The Example employs an isocyanate-crosslinked polyvinyl alcohol, which of course is no longer a polyvinyl alcohol, but a polyurethane polymer. If the rejection is maintained, Applicants request that a full translation of the German language reference be supplied, per the O.G. Notice of the Director.

Both *Maruyama* references teach the use of silane-modified polyvinyl alcohols, but *Maruyama* '947 also requires chitosan along with an aldehyde as a crosslinker. Only *Maruyama* '239 discloses use of a silane-modified polyvinyl alcohol alone.

None of the references teach or suggest use of a silane-modified polyvinyl alcohol also containing 1-alkylvinyl groups. Since none of the references disclose, teach or suggest using 1-alkylvinyl ester comonomers, they cannot render the subject invention obvious. The references must teach or suggest what Applicants have done. A reference which fails to mention 1-alkylvinyl esters cannot do so. See, e.g. *In re Evanega* 4 USPQ 2d 1249, 1251 (Fed. Cir. 1987).

The Office states, on its own, that it would be obvious to substitute 1-alkylvinyl esters for a portion of vinyl acetate "to raise the boiling point of the polymers formed."

First, rejections must be based on the prior art, and the prior art does not even mention 1-alkyl vinyl esters; and second, the rationale set forth makes no sense whatsoever.

Polyvinyl alcohols are high molecular weight solid polymers. Partially and fully hydrolyzed polyvinyl alcohol has a melting point of around 180 - 190°C, and both silane-modified polyvinyl alcohols and 1-alkylvinyl-silane-modified polyvinyl alcohols have similar melting points. Polyvinyl alcohol decomposes rapidly above 200°C. As is well known, the melting point or glass transition temperature can be calculated with reasonable accuracy by the Fox equation.

However, none of these polyvinyl alcohols has a boiling point. All are polymeric and of such high molecular weight that they would decompose long before they could even approach a boiling point.

Moreover, why would one wish to increase the boiling point anyway, even if a boiling point existed? There is no reason for doing so. The polymers of the subject invention are used as a primer coat for paper to later be coated with a silicone release film. The primers are applied from aqueous solution or dispersion. They are not even applied from the melt. Boiling point is of completely no relevance, nor is melting point.

The rejection must be withdrawn for the above reasons; there is no *prima facie* case.

However, in addition to no *prima facie* obviousness, Applicants have shown that their primer compositions offer surprising and unexpected results. One skilled in the art could not predict that by including 1 - 30% of a 1-alkylvinyl ester molecule into a silane-modified polyvinyl alcohol, that the adhesion of a silicone release coating would be outstanding, even after storage of the polyvinyl alcohol. Note the table on page 10, which was previously discussed.

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None of the prior art teaches or suggests any modification of a polyvinyl alcohol which would improve adhesion after storage. The claims are patentable for these reasons as well.

Applicants submit that the claims are now in condition for Allowance, and respectfully request a Notice to that effect. If the Examiner believes that further discussion will advance the prosecution of the Application, the Examiner is highly encouraged to telephone Applicants' attorney at the number given below.

Respectfully submitted,

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Attachment: Terminal Disclaimer